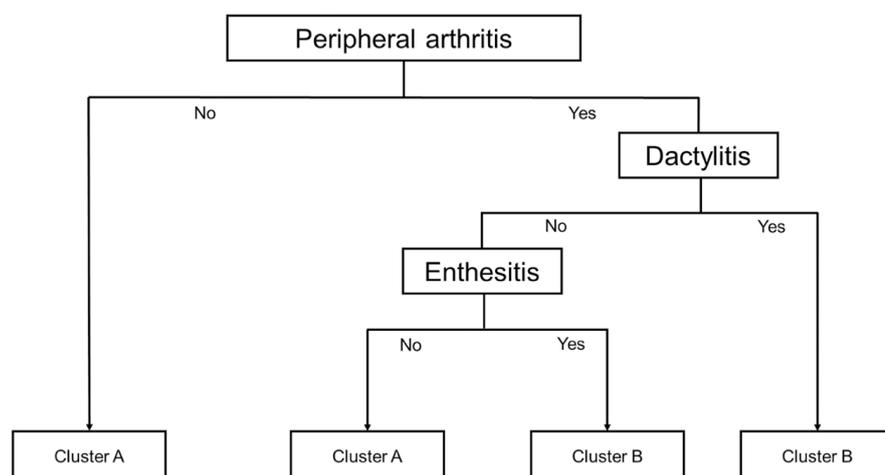


**Supplementary Table S1.** Subgroup Cox regression analysis of drug discontinuation\* between AS patients with the cluster A phenotype and cluster B phenotype.

Method	Variable	Hazard ratio	95% CI	p-value
Propensity score-based	Cluster B (compared to cluster A)	1.652	1.090–2.480	0.015
	Cluster B (compared to cluster A)	1.463	0.902–2.374	0.123
Covariate adjustment	Age	1.006	0.994–1.019	0.327
	Female vs. male sex	1.235	0.832–1.832	0.294
	BMI (kg/m <sup>2</sup> )			
	<18.5	1.693	0.858–3.340	0.129
	18.5–22.9	1.000 (Reference)		
	23.0–24.9	1.143	0.756–1.729	0.257
	≥25.0	1.609	1.113–2.327	0.011
	Current smoker	1.464	1.042–2.057	0.028
	HLA B27 (+) vs. HLA B27 (-)	0.438	0.286–0.640	<0.001
	ASDAS	1.003	0.851–1.184	0.967
	BASFI score	1.012	0.948–1.080	0.725
	Previous exposure to biologics vs. biologics-naïve	1.031	0.714–1.487	0.871
	IL-17i (compared with TNFi)	1.000	0.243–2.439	0.993

TNFi: tumour necrosis factor inhibitor; BMI: Body Mass Index; ASDAS: Ankylosing Spondylitis Disease Activity Score; BASFI: Bath Ankylosing Spondylitis Functional Index.

\*This analysis includes only biologic discontinuations due to ineffectiveness, n=1204; 1111 for cluster A and 93 for cluster B.



**Supplementary Fig. S1.** Decision tree of dividing ankylosing spondylitis patients with cluster A and B.